

NREL/ORNL/DOE Distributed Power System Integration R&D



DR Certification Laboratory Pilot, Accreditation Plan and Interconnection Agreement Handbook

Quarterly Review Meeting
October 24, 2001 Golden, CO
Tom Key
EPRI PEAC

DR Certification & Accreditation Project Overview



- ✍ This project will define a certification and lab accreditation process, demonstrate their application through a pilot testing based on emerging connection standards.
- ✍ 3-year Deliverables include:
 - certification and labeling criteria
 - test protocols and test results
 - handbook on interconnection agreements
 - web-based information hotline and technical training materials

Base-year activities (Tasks 1 – 2)



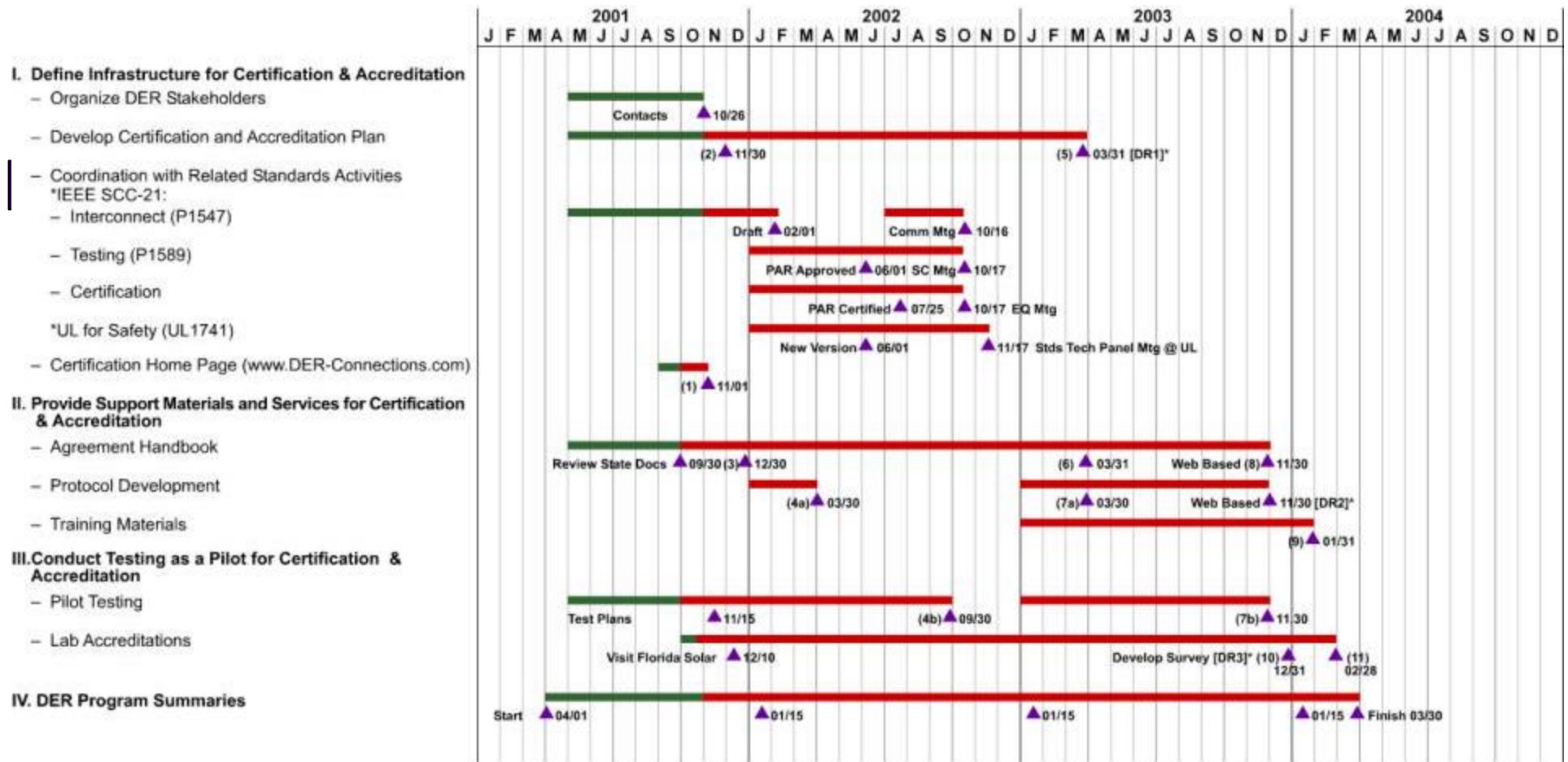
- ✍ Organize stakeholders advisor group
- ✍ Obtain industry input and review of draft certification criteria – apply related standards such as IEEE, UL, DR industry
- ✍ Design web-based information resource (10/15)
- ✍ Create roadmap plan (draft submitted 10/15)
- ✍ Research existing interconnect agreements
- ✍ Plan for interconnection handbook

Progress to establish a Web-site



- ✍ Web-based Information Resource
 - Project milestone chart, plans, deliverables
 - Library for Connection
 - Tools for Connection
 - Summary of other interconnection activities
- ✍ Communication links to interconnection information
- ✍ Information transfer area for stakeholders participating in certification and accreditation efforts
- ✍ URL “derConnections.com” (a working area on www.EPRI-PEAC.com website)

Activities and Milestones to Certification



Sample of Ongoing Activities

✍ Related efforts by the following organizations need to be considered

- Department of Energy
- [California Energy Commission](#)
- New York NYSERDA
- Other States
- EPRI and Utility Industry
- Other Private and Public Research

Quantifying Benefits and Costs

- (1) Determine ancillary service applications
- (2) Improve pulse-load performance in fuel cells
- (3) Assess emerging DER systems
- (4) Investigate DER interconnection equipment costs
- (5) Evaluate conditions where microgrids offer cost and performance advantages

Improve Grid Connectivity Performance

- (1) Develop guide for consistent testing of DER
- (2) Participate and monitor IEEE interconnection standards development
- (3) Demonstrate increased DER reliability, overload capability, and grid response characterization
- (4) Integrate diverse DER systems for improved grid capability
- (5) Verify IEEE P1547, SC tests, unintentional islanding and protection


Power Quality

- (1) Mitigating PQ problems with fuel cells
- (2) Characterizing impacts of DER on electrical distribution feeders
- (3) Define DER and distribution feeder interactions for power delivery

Education and Training

- (1) Create and conduct DER training for utility engineers, planners, regulators, and customers
- (2) Invent a portable utility simulator with software control to verify DER protection features

Road Map Plan and Objective

- 
- ✍ For developing a certification and accreditation infrastructure
 - ✍ Shows objectives, activities and milestone
 - ✍ Promotes involvement of stakeholders and show there up to date input
 - ✍ Provides criteria that define completion of each milestone
 - ✍ List current action items and next steps

Base Year Deliverables



- ✍ DR Certification Web-Based working area on EPRI-PEAC Web Site (11/15)
- ✍ Draft Certification and Accreditation Plan (1/02)
- ✍ Interconnection Handbook Outline (3/02)
- ✍ Annual Technical Status Report (5/02)

Plans for next Quarter



- ✍ Open “derConnections.com” web site
- ✍ Compile and report on emerging interconnect agreements (11/01)
Results will be placed on web site.
- ✍ Develop plan and contents outline for interconnection handbook with inputs/comments from stakeholders
Note: coordinate with NRECA project